UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
RADIO STATION AUTHORIZATION

Current Authorization : FCC WEB Reproduction

Unofficial Copy

Name: GOGO LLC

Call Sign: E120106
File Number: SES-MFS-20151022-00735

Authorization Type: Modification of License
Non Common Carrier **Grant Date:** 06/30/2016 **Expiration Date:** 05/01/2028

Nature of Service: Fixed Satellite Service
Other

Class of Station: Other

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1)	AES1	UP TO 1000 ESAA TERMINALS (0.24 m) CONUS and OCONUS			0.0	83	
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.					
2)	AES2	UP TO 1000 ESAA TERMINALS (0.24 m) CONUS and OCONUS				83	
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.					

Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning Wednesday, May 01, 2013 (3 AM Eastern Standard Time) and ending Monday, May 01, 2028 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is Friday, June 30, 2017 (3 AM Eastern Standard Time). Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

B) Particulars of Operations

The General Provision 1010 applies to all receiving frequency bands.
The General Provision 1900 applies to all transmitting frequency bands.
For the text of these provisions, refer to Section H.

#	Frequency	Polarization	Emission	Tx/Rx Mode	Max EIRP /Carrier	Max EIRP Density	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	14000.0000 - 14500.0000	H,V	8M00G7D	T	44.50	11.49	AES1		DIGITAL DATA SERVICES
2)	14000.0000 - 14500.0000	H,V	6M94G7D	T	44.45	12.05	AES1		DIGITAL DATA SERVICES
3)	14000.0000 - 14500.0000	H,V	6M56G7D	T	44.43	12.28	AES1		DIGITAL DATA SERVICES
4)	14000.0000 - 14500.0000	H,V	6M00G7D	T	44.40	12.70	AES1		DIGITAL DATA SERVICES
5)	14000.0000 - 14500.0000	H,V	4M10G7D	T	42.80	12.70	AES1		DIGITAL DATA SERVICES
6)	14000.0000 - 14500.0000	H,V	2M34G7D	T	44.63	18.11	AES1		DIGITAL DATA SERVICES
7)	14000.0000 - 14500.0000	H,V	2M40G7D	T	43.89	16.91	AES1		DIGITAL DATA SERVICES
8)	14000.0000 - 14500.0000	H,V	2M50G7D	T	44.57	17.76	AES1		DIGITAL DATA SERVICES
9)	14000.0000 - 14500.0000	H,V	3M66G7D	T	44.55	16.06	AES1		DIGITAL DATA SERVICES

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10) 14000.0000 - 14500.0000	H,V	3M79G7D	T	44.48	15.83	AES1	DIGITAL DATA SERVICES
11) 14000.0000 - 14500.0000	H,V	3M89G7D	T	44.55	15.79	AES1	DIGITAL DATA SERVICES
12) 14000.0000 - 14500.0000	H,V	3M90G7D	T	44.49	15.75	AES1	DIGITAL DATA SERVICES
13) 14000.0000 - 14500.0000	H,V	6M57G7D	T	44.53	13.51	AES1	DIGITAL DATA SERVICES
14) 14000.0000 - 14500.0000	H,V	882KG7D	T	44.56	22.59	AES1	DIGITAL DATA SERVICES
15) 14000.0000 - 14500.0000	H,V	9M36G7D	T	42.32	9.77	AES1	DIGITAL DATA SERVICES
16) 14000.0000 - 14500.0000	H,V	8M19G7D	T	43.20	10.10	AES1	DIGITAL DATA SERVICES
17) 14000.0000 - 14500.0000	H,V	4M10G7D	T	38.10	8.00	AES1	DIGITAL DATA SERVICES
18) 14000.0000 - 14500.0000	H,V	1M40G7D	T	44.60	19.10	AES1	DIGITAL DATA SERVICES
19) 14000.0000 - 14500.0000	H,V	1M00G7W	T	44.33	20.35	AES1	DIGITAL DATA SERVICES
20) 14000.0000 - 14500.0000	H,V	1M20G7W	T	44.20	19.43	AES1	DIGITAL DATA SERVICES
21) 14000.0000 - 14500.0000	H,V	1M67G7W	T	42.74	16.54	AES1	DIGITAL DATA SERVICES
22) 14000.0000 - 14500.0000	H,V	1M75G7W	T	43.10	16.69	AES1	DIGITAL DATA SERVICES
23) 14000.0000 - 14500.0000	H,V	2M00G7W	T	44.50	17.50	AES1	DIGITAL DATA SERVICES
24) 14000.0000 - 14500.0000	H,V	3M00G7W	T	44.50	15.75	AES1	DIGITAL DATA SERVICES
25) 14000.0000 - 14500.0000	H,V	4M00G7W	T	44.50	14.50	AES1	DIGITAL DATA SERVICES
26) 14000.0000 - 14500.0000	H,V	5M00G7W	T	44.50	13.50	AES1	DIGITAL DATA SERVICES
27) 14000.0000 - 14500.0000	H,V	6M76G7W	T	43.50	11.22	AES1	DIGITAL DATA SERVICES
28) 14000.0000 - 14500.0000	H,V	830KG7W	T	42.40	19.22	AES1	DIGITAL DATA SERVICES
29) 12200.0000 - 12750.0000	H,V	30M0G7D	R	0.00	0.00	AES1	Digital Data Services
30) 11700.0000 - 12200.0000	H,V	30M0G7D	R			AES1	Digital Data Services
31) 11450.0000 - 11700.0000	H,V	30M0G7D	R			AES1	Digital Data Services
32) 10950.0000 - 11200.0000	H,V	30M0G7D	R			AES1	Digital Data Services
33) 14000.0000 - 14500.0000	H,V	7M28G7D	T	41.60	9.00	AES2	DIGITAL DATA SERVICES
34) 14000.0000 - 14500.0000	H,V	1M51G7D	T	44.60	18.90	AES2	DIGITAL DATA SERVICES
35) 14000.0000 - 14500.0000	H,V	1M80G7D	T	43.20	16.60	AES2	DIGITAL DATA SERVICES
36) 14000.0000 - 14500.0000	H,V	2M00G7D	T	43.90	16.90	AES2	DIGITAL DATA SERVICES
37) 14000.0000 - 14500.0000	H,V	2M00G7D	T	44.60	17.60	AES2	DIGITAL DATA SERVICES
38) 14000.0000 - 14500.0000	H,V	2M10G7D	T	44.20	17.00	AES2	DIGITAL DATA SERVICES
39) 14000.0000 - 14500.0000	H,V	2M27G7D	T	44.60	17.00	AES2	DIGITAL DATA SERVICES
40) 14000.0000 - 14500.0000	H,V	2M40G7D	T	44.50	16.70	AES2	DIGITAL DATA SERVICES
41) 14000.0000 - 14500.0000	H,V	3M00G7D	T	44.50	15.70	AES2	DIGITAL DATA SERVICES

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42) 14000.0000 - 14500.0000	H,V	3M60G7D	T	44.60	15.00	AES2	DIGITAL DATA SERVICES
43) 14000.0000 - 14500.0000	H,V	4M10G7D	T	41.60	11.50	AES2	DIGITAL DATA SERVICES
44) 14000.0000 - 14500.0000	H,V	4M80G7D	T	44.60	13.80	AES2	DIGITAL DATA SERVICES
45) 14000.0000 - 14500.0000	H,V	5M60G7D	T	44.50	13.00	AES2	DIGITAL DATA SERVICES
46) 14000.0000 - 14500.0000	H,V	5M64G7D	T	40.70	13.10	AES2	DIGITAL DATA SERVICES
47) 14000.0000 - 14500.0000	H,V	5M83G7D	T	44.50	12.90	AES2	DIGITAL DATA SERVICES
48) 14000.0000 - 14500.0000	H,V	5M97G7D	T	43.10	11.40	AES2	DIGITAL DATA SERVICES
49) 14000.0000 - 14500.0000	H,V	6M72G7D	T	42.30	10.00	AES2	DIGITAL DATA SERVICES
50) 14000.0000 - 14500.0000	H,V	7M17G7D	T	40.90	8.40	AES2	DIGITAL DATA SERVICES
51) 14000.0000 - 14500.0000	H,V	7M40G7D	T	41.40	8.70	AES2	DIGITAL DATA SERVICES
52) 14000.0000 - 14500.0000	H,V	7M50G7D	T	41.60	8.90	AES2	DIGITAL DATA SERVICES
53) 14000.0000 - 14500.0000	H,V	8M00G7D	T	44.60	11.60	AES2	DIGITAL DATA SERVICES
54) 14000.0000 - 14500.0000	H,V	8M10G7D	T	43.20	10.10	AES2	DIGITAL DATA SERVICES
55) 14000.0000 - 14500.0000	H,V	1M20G7W	T	44.50	19.73	AES2	DIGITAL DATA SERVICES
56) 14000.0000 - 14500.0000	H,V	1M75G7W	T	42.60	16.19	AES2	DIGITAL DATA SERVICES
57) 14000.0000 - 14500.0000	H,V	2M00G7W	T	46.98	19.99	AES2	DIGITAL DATA SERVICES
58) 14000.0000 - 14500.0000	H,V	3M00G7W	T	50.20	21.40	AES2	DIGITAL DATA SERVICES
59) 14000.0000 - 14500.0000	H,V	4M00G7W	T	45.94	15.94	AES2	DIGITAL DATA SERVICES
60) 14000.0000 - 14500.0000	H,V	6M00G7W	T	45.08	13.32	AES2	DIGITAL DATA SERVICES
61) 14000.0000 - 14500.0000	H,V	7M48G7W	T	43.87	11.15	AES2	DIGITAL DATA SERVICES
62) 14000.0000 - 14500.0000	H,V	930KG7W	T	42.40	18.74	AES2	DIGITAL DATA SERVICES
63) 14000.0000 - 14500.0000	H,V	1M00G7W	T	44.71	20.73	AES2	DIGITAL DATA SERVICES
64) 12250.0000 - 12750.0000	H,V	30M0G7D	R			AES2	DIGITAL DATA SERVICES
65) 11700.0000 - 12200.0000	H,V	30M0G7D	R			AES2	DIGITAL DATA SERVICES
66) 11450.0000 - 11700.0000	H,V	30M0G7D	R			AES2	DIGITAL DATA SERVICES
67) 10950.0000 - 11200.0000	H,V	30M0G7D	R			AES2	DIGITAL DATA SERVICES

C) Frequency Coordination

#	Frequency Limits(MHz)	Satellite Arc (Deg. Long.) East Limit	Satellite Arc (Deg. Long.) West Limit	Elevation (Degrees) East Limit	Elevation (Degrees) West Limit	Azimuth (Degrees) East Limit	Azimuth (Degrees) West Limit	Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
1)	14000.0000 - 14500.0000	302.0E	302.0E	5.0	5.0	0.0	0.0	-3.9	AES1
2)	14000.0000 - 14500.0000	101.0W	101.0W	5.0	5.0	0.0	0.0	-2.0	AES1
3)	14000.0000 - 14500.0000	315.0E	315.0E	5.0	5.0	0.0	0.0	-3.9	AES1

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4)	12250.0000 - 12750.0000	166.0E-166.0E	5.0 - 5.0	0.0 - 0.0		AES1
5)	14000.0000 - 14500.0000	166.0E-166.0E	5.0 - 5.0	0.0 - 0.0	-3.9	AES1
6)	11700.0000 - 12200.0000	101.0W-101.0W	5.0 - 5.0	0.0 - 0.0		AES1
7)	11700.0000 - 11950.0000	315.0E-315.0E	5.0 - 5.0	0.0 - 0.0		AES1
8)	11700.0000 - 12200.0000	302.0E-302.0E	5.0 - 5.0	0.0 - 0.0		AES1
9)	12500.0000 - 12750.0000	338.0E-338.0E	5.0 - 5.0			AES1
10)	14000.0000 - 14500.0000	338.0E-338.0E	5.0 - 5.0		-3.9	AES1
11)	11450.0000 - 11700.0000	302.0E-302.0E	5.0 - 5.0		0.0	AES1
12)	12250.0000 - 12500.0000	72.1E-72.1E	5.0 - 5.0	- 0.0		AES1
13)	14000.0000 - 14500.0000	72.1E-72.1E	5.0 - 5.0		-3.9	AES1
14)	11700.0000 - 12200.0000	172.0E-172.0E	5.0 - 5.0			AES1
15)	14000.0000 - 14500.0000	40.5W-40.5W	5.0 - 5.0		0.6	AES1
16)	14000.0000 - 14500.0000	60.0E-60.0E	5.0 - 5.0		-1.0	AES1
17)	14000.0000 - 14500.0000	114.9W-114.9W	5.0 - 5.0		-4.0	AES1
18)	14000.0000 - 14500.0000	172.0E-172.0E	5.0 - 5.0		5.1	AES1
19)	10950.0000 - 11200.0000	172.0E-172.0E	5.0 - 5.0			AES1
20)	11450.0000 - 11700.0000	172.0E-172.0E	5.0 - 5.0			AES1
21)	12200.0000 - 12750.0000	172.0E-172.0E	5.0 - 5.0			AES1
22)	10950.0000 - 11200.0000	40.5W-40.5W	5.0 - 5.0			AES1
23)	10950.0000 - 11200.0000	60.0E-60.0E	5.0 - 5.0			AES1
24)	11450.0000 - 11700.0000	60.0E-60.0E	5.0 - 5.0			AES1
25)	11700.0000 - 12200.0000	114.9W-114.9W	5.0 - 5.0			AES1
26)	14000.0000 - 14500.0000	37.5W-37.5W	5.0 - 5.0		-11.5	AES1
27)	14000.0000 - 14500.0000	138.0E-138.0E	5.0 - 5.0		-11.5	AES1
28)	11450.0000 - 11700.0000	37.5W-37.5W	5.0 - 5.0			AES1
29)	12250.0000 - 12750.0000	138.0E-138.0E	5.0 - 5.0			AES1
30)	14000.0000 - 14500.0000	90.0E-91.0W	5.0 - 5.0	90.0 - 270.0	0.06	AES1
31)	10950.0000 - 11200.0000	90.0E-91.0W	5.0 - 5.0	90.0 - 270.0		AES1
32)	11450.0000 - 11700.0000	90.0E-91.0W	5.0 - 5.0	90.0 - 270.0		AES1
33)	11700.0000 - 12200.0000	90.0E-91.0W	5.0 - 5.0	90.0 - 270.0		AES1
34)	12200.0000 - 12750.0000	90.0E-91.0W	5.0 - 5.0	90.0 - 270.0		AES1
35)	14000.0000 - 14500.0000	138.0E-138.0E	15.0 - 15.0		-14.8	AES2
36)	14000.0000 - 14500.0000	166.0E-166.0E	15.0 - 15.0		-18.6	AES2

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37)	14000.0000 - 14500.0000	302.0E-302.0E	15.0 - 15.0		-25.0	AES2
38)	14000.0000 - 14500.0000	315.0E-315.0E	15.0 - 15.0		-22.5	AES2
39)	14000.0000 - 14500.0000	319.5E-319.5E	15.0 - 15.0		-17.5	AES2
40)	14000.0000 - 14500.0000	338.0E-338.0E	15.0 - 15.0		-18.4	AES2
41)	10950.0000 - 11200.0000	37.5W-37.5W	12.0 - 12.0			AES2
42)	10950.0000 - 11200.0000	60.0E-60.0E	15.0 - 15.0			AES2
43)	10950.0000 - 11200.0000	319.5E-319.0E	15.0 - 15.0			AES2
44)	11450.0000 - 11700.0000	37.5W-37.5W	15.0 - 15.0			AES2
45)	14000.0000 - 14500.0000	37.5W-37.5W	12.0 - 12.0	0.0 -	-20.5	AES2
46)	14000.0000 - 14500.0000	60.0E-60.0E	15.0 - 15.0		-7.1	AES2
47)	14000.0000 - 14500.0000	72.1E-72.1E	15.0 - 15.0		-26.4	AES2
48)	14000.0000 - 14500.0000	101.0W-101.0W	15.0 - 15.0		-21.4	AES2
49)	14000.0000 - 14500.0000	114.9W-114.9W	15.0 - 15.0		-19.5	AES2
50)	12250.0000 - 12750.0000	166.0E-166.0E	15.0 - 15.0			AES2
51)	11450.0000 - 11700.0000	60.0W-60.0W	15.0 - 15.0			AES2
52)	11450.0000 - 11700.0000	302.0E-302.0E	15.0 - 15.0			AES2
53)	11450.0000 - 11700.0000	319.5E-319.5E	15.0 - 15.0			AES2
54)	11700.0000 - 12200.0000	101.0W-101.0W	15.0 - 15.0			AES2
55)	11700.0000 - 12200.0000	114.9W-114.9W	15.0 - 15.0			AES2
56)	11700.0000 - 12200.0000	302.0E-302.0E	15.0 - 15.0			AES2
57)	11700.0000 - 12200.0000	315.0E-315.0E	15.0 - 15.0			AES2
58)	12250.0000 - 12750.0000	138.0E-138.0E	15.0 - 15.0			AES2
59)	12250.0000 - 12750.0000	72.1W-72.1W	15.0 - 15.0			AES2
60)	12500.0000 - 12750.0000	37.5W-37.5W	15.0 - 15.0			AES2
61)	12500.0000 - 12750.0000	338.0E-338.0E	15.0 - 15.0			AES2
62)	14000.0000 - 14500.0000	90.0E-91.0W	12.5 - 12.5	90.0 - 270.0	-7.1	AES2
63)	10950.0000 - 11200.0000	90.0E-91.0W	12.5 - 12.5	90.0 - 270.0		AES2
64)	11450.0000 - 11700.0000	90.0E-91.0W	12.5 - 12.5	90.0 - 270.0		AES2
65)	11700.0000 - 12200.0000	90.0E-91.0W	12.5 - 12.5	90.0 - 270.0		AES2
66)	12200.0000 - 122750.0000	90.0E-91.0W	12.5 - 12.5	90.0 - 270.0		AES2

D) Point of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

1) AES1 to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)

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2) AES1 to INTELSAT 19 (S2850) @ 166.0 degrees E.L. (U.S.-licensed)

3) AES1 to INTELSAT 14 (S2785) @ 45 degrees W.L. (U.S.-licensed)

4) AES1 to INTELSAT 21 (S2863) @ 58.0 degrees W.L. (U.S.-licensed)

5) AES1 to SES-4 (S2828) @ 22 degrees W.L. (Netherlands-licensed)

6) AES1 to INTELSAT 22 (S2846) @ 72.1 degrees E.L. (U.S.-licensed)

7) AES1 to SES-6 (S2870) @ 40.5 degrees W.L. (Netherlands-licensed)

8) AES1 to TELSTAR 11N (S2357) @ 37.55 degrees W.L. (U.S.-licensed)

9) AES1 to INTELSAT 904 (S2408) @ 60 degrees E.L. (U.S.-licensed)

10) AES1 to EUTELSAT 172A (S2610) @ 172 degrees E.L. (formerly GE-23) (U.S.-licensed)

11) AES1 to INTELSAT 18 (S2817) @ 180 degrees E.L. (U.S.-licensed)

12) AES1 to EUTELSAT 117WA (S2873) @ 116.8 degrees W.L. (formerly SATMEX 8) (Mexico-licensed)

13) AES1 to JCSAT 5A (M063130) @ 132 degrees E.L. (Japan-licensed)

14) AES1 to GALAXY 17 (S2715) @ 91 degrees W.L. (U.S.-licensed)

15) AES1 to Apstar V @ 138 degrees E.L. (China-licensed)

16) AES1 to AMC 1 (S2445) @ 129.15 degrees W.L. (U.S.-licensed)

17) AES1 to EUTELSAT 115WB (S2938) @ 114.9 degrees W.L. (formerly SATMEX 7) (Mexico-licensed)

18) AES1 to Yamal 401 @ 90 degrees E.L. (Russia-licensed)

19) AES1 to Yamal 300K (M174162) @ 183 degrees E.L. (Russia-licensed)

20) AES1 to JCSAT-2B (M174163) @ 154 degrees E.L. (Japan-licensed)

21) AES1 to ASIASAT 7 (M174161) @ 105.5 degrees E.L. (China-licensed)

22) AES2 to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)

23) AES2 to INTELSAT 19 (S2850) @ 166.0 degrees E.L. (U.S.-licensed)

24) AES2 to INTELSAT 14 (S2785) @ 45 degrees W.L. (U.S.-licensed)

25) AES2 to INTELSAT 21 (S2863) @ 58.0 degrees W.L. (U.S.-licensed)

26) AES2 to SES-4 (S2828) @ 22 degrees W.L. (Netherlands-licensed)

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27) AES2 to INTELSAT 22 (S2846) @ 72.1 degrees E.L. (U.S.-licensed)

28) AES2 to SES-6 (S2870) @ 40.5 degrees W.L. (Netherlands-licensed)

29) AES2 to TELSTAR 11N (S2357) @ 37.55 degrees W.L. (U.S.-licensed)

30) AES2 to INTELSAT 904 (S2408) @ 60 degrees E.L. (U.S.-licensed)

31) AES2 to INTELSAT 18 (S2817) @ 180 degrees E.L. (U.S.-licensed)

32) AES2 to EUTELSAT 117WA (S2873) @ 116.8 degrees W.L. (formerly SATMEX 8) (Mexico-licensed)

33) AES2 to GALAXY 17 (S2715) @ 91 degrees W.L. (U.S.-licensed)

34) AES2 to Apstar V @ 138 degrees E.L. (China-licensed)

35) AES2 to AMC 1 (S2445) @ 129.15 degrees W.L. (U.S.-licensed)

36) AES2 to EUTELSAT 115WB (S2938) @ 114.9 degrees W.L. (formerly SATMEX 7) (Mexico-licensed)

37) AES2 to Yamal 401 @ 90 degrees E.L. (Russia-licensed)

38) AES2 to Yamal 300K (M174162) @ 183 degrees E.L. (Russia-licensed)

39) AES2 to JCSAT-2B (M174163) @ 154 degrees E.L. (Japan-licensed)

40) AES2 to ASIASAT 7 (M174161) @ 105.5 degrees E.L. (China-licensed)

E) Antenna Facilites

Site ID	Antenna ID	Units	Diameter (Meters)	Manufacturer	Model Number	Site Elevation	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
AES1	AES1	1000	0.24	AeroSat	HR6400	0.0	0.0 AGL/ 0.0 AMSL	

Max Gains(s):29.0 dBi @ 14.4700 GHz 31.8 dBi @ 11.7000 GHz

Maximum total input power at antenna flange (Watts) = 35.48

Maximum aggregate output EIRP for all carriers (dBW)44.5

AES2	AES2	1000	0.74	THINKOM	2KUANTENNA			

Max Gains(s):36.7 dBi @ 14.2500 GHz 35.0 dBi @ 11.8500 GHz

Maximum total input power at antenna flange (Watts) = 26.8

Maximum aggregate output EIRP for all carriers (dBW)51.0

F) Remote Control

AES1	GoGo Systems Operation Center 111 N CANAL STREET CHICAGO, COOK, IL, 60606 8669434662	**Call Sign:**
AES2	GoGo Systems Operation Center 111 N CANAL STREET CHICAGO, COOK, IL, 60606 8669434662	**Call Sign:**

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Call Sign: E120106
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Authorization Type: Modification of License
Non Common Carrier **Grant Date:** 06/30/2016 **Expiration Date:** 05/01/2028

G) Antenna Structure marking and lighting requirements:

None unless otherwise specified under Special and General Provisions

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

1010	Applicable to all receiving frequency bands. Emission designator indicates the maximum bandwidth of received signal at associated station(s). Maximum EIRP and maximum EIRP density are not applicable to receive operations.
1900	Applicable to all transmitting frequency bands. Authority is granted to transmit any number of RF carriers with the specified parameters on any discrete frequencies within associated band in accordance with the other terms and conditions of this authorization, subject to any additional limitations that may be required to avoid unacceptable levels of inter-satellite interference.
2010	This authorization is issued pursuant to the Commission's Second Report and Order adopted June 16, 1972 (35 FCC 2d 844) and Memorandum, Opinion and Order adopted December 21, 1972 (38 FCC 2d 665) in Docket No. 16495 and is subject to the policies adopted in that proceeding.
2916	Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.
3219	All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the Commission's radiofrequency (RF) exposure guidelines, pursuant to Section 1.1307(b)(1) through (b)(3) of the Commission's rules, or if not in compliance, file an Environmental Assessment (EA) as specified in Section 1.1311. See 47 CFR § 1.1307 (b) (5).
90053	The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oetlrfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers. The licensee shall ensure installation of terminals on aircraft by qualified installers who have an understanding of the antenna's radiation environment and the measures best suited to maximize protection of the general public and persons operating the aircraft and equipment. A terminal exhibiting radiation exposure levels exceeding 1.0 mW/cm² in accessible areas, such as at the exterior surface of the radome, shall have a label attached to the surface of the terminal warning about the radiation hazard and shall include thereon a diagram showing the regions around the terminal where the radiation levels could exceed 1.0 mW/cm².
90062	Operation pursuant to this authorization outside the United States in the 14.0-14.5 GHz band must be in compliance with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band.
90063	Gogo LLC must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein.
90066	Stations authorized herein must not be used to provide air traffic control communications.
90067	Operation in the territory or airspace of any country other than the United States must be in compliance with the applicable laws, regulations, and licensing procedures of that country, as well as with the conditions of this authorization.
90073	Reception of downlink transmissions in the 11.95-12.2 GHz frequency band from Intelsat 14 (Call Sign S2785) at 45° W.L. is not permitted by this authorization. Intelsat 14's authorization does not include those frequencies. (IBFS File No. SAT-RPL-20090123-00007).

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90079	Antenna elevation for all operations must be at least 5 degrees above the geographic horizon while the aircraft is on the ground.
90080	Gogo LLC shall comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.
90081	All operations shall be on a non-common carrier basis.
90104	For any new antenna authorized by this grant, the licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, Site ID, date of the license and certification that the antenna model was put into operation.
90105	Authority is granted to operate this station by remote control provided that the operator is responsible for ensuring the operations are in accordance with the terms and conditions of the license and pursuant to Section 25.271 of the Commission's rules. 47 C.F.R 25.271.
90122	The earth stations in this blanket license are operated by remote control. The remote control point is a material term of the license and may not be changed without prior authorization under Section 25.117 of the Commission's rules. Public Notice "The International Bureau Provides Guidance Concerning the Relocation of Earth Station Remote Control Points," DA 06-978 (rel. May 4, 2006).
90123	Operations authorized pursuant to this license are operations by U.S.-registered aircraft anywhere within the coverage area/frequency bands identified in the application for the satellites listed as points of communication. Operations authorized pursuant to this license also include operations by non-U.S.-registered aircraft within U.S. territory, including territorial waters. Authorization for operations by U.S.-registered aircraft outside U.S. territory, pursuant to this license, does not constitute a grant of access to the market in the United States under the Commission's DISCO II policies.
90185	This authorization is subject to an overall limit of 2000 remote terminals, of the types identified in Section A above, operating at one time.
90246	ESAAs authorized herein must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.
90247	ESAAs authorized herein must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each ESAA to determine if it is malfunctioning, and each ESAA must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed-satellite service network.
90303	AeroSat HR6400, antenna ID AES1, is limited to the maximum input power spectral density of -15.45 dBW/4kHz, with worst case skew angle of -52 ° and elevation angle of 5°.
90304	Operation pursuant to this authorization must be in compliance with the terms of the licensee's coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration pertaining to operation of ESAAs in the Ku-Band.
90305	When operating in international airspace within line-of-sight of the territory of a foreign administration where Fixed Service networks have a primary allocation in the 14.0-14.5 GHz band, an ESAA must not produce ground-level power flux density (pfd) in such territory in excess of the following values unless the foreign administration has imposed other conditions for protecting its FS stations: -132 + 0.5 x THETA dB(W/(m^2 MHz)) for THETA <= 40° ; -112 dB(W/(m^2 MHz)) for 40° < THETA <= 90°. Where: THETA is the angle of arrival of the radio-frequency wave in degrees above the horizontal, and the aforementioned limits relate to the pfd and angles of arrival that would be obtained under free space propagation conditions.

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90309 The ESAAs are authorized to receive downlink transmissions in the 10.95-11.2 GHz and 11.45-11.7 GHz frequency band from the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Reception is authorized on an unprotected basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No.12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.

90310 For each ESAA transmitter, the licensee shall maintain records of the following data for each operating ESAA, a record of the aircraft location (i.e., latitude/longitude/altitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and maintained for a period of not less than one year. Records shall be recorded at time intervals no greater than one (1) minute while the ESAA is transmitting. The ESAA operator shall make this data available, in the form of a comma delimited electronic spreadsheet, within 24 hours of a request from the Commission, NTIA, or a frequency coordinator for purposes of resolving harmful interference events. A description of the units (i.e., degrees, minutes, MHz ...) in which the records values are recorded will be supplied along with the records.

90311 The ESAAs are authorized to transmit in the 14.0-14.5 GHz frequency band to the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Such transmissions are authorized on a primary basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No. 12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95 -11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.

90321 The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 CFR § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. Yamal 300K is an ISS Reshetnev Ekspress-1000NTA spacecraft that was launched on November 2, 2012. Applicant states that Yamal 300K has one tank, with a volume of 40 liters, containing nitrogen and hydrazine separated by an internal membrane. At satellite end of life the tank will retain 132.5 grams of nitrogen in a total tank volume of 39.3 liters. We grant a waiver of Section 25.283(c) with respect to this de minimis inert gas. The applicant also states that hydrazine will be depleted at end of life, with an estimated residual mass of 700 grams of hydrazine in a total tank volume of 0.7 liters. The applicant also states that, at end of life, two identical interconnected tanks will retain 1.08 kilograms of xenon in a total volume of 76 liters. We find that the measures described in the application for depletion of hydrazine and xenon are appropriate.

90322 The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 CFR § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. Yamal 401 is an ISS Reshetnev Ekspress-2000A spacecraft that was launched on December 15, 2014. Applicant states that Yamal 401 has three tanks, each with a volume of 40 liters, and each containing nitrogen and hydrazine separated by an internal membrane. At satellite end of life the tanks will retain a total of 397.5 grams of nitrogen in total tank volume of 117.9 liters. We grant a waiver of Section 25.283(c) with respect to this de minimis inert gas. The applicant also states that hydrazine will be depleted at end of life, with an estimated residual mass in each tank of 700 grams remaining in 0.7 liters. The applicant also states that, at end of life, four identical interconnected tanks will retain 2.16 kilograms of xenon in a total volume of 152 liters, corresponding to the minimum operating pressure of the plasma thrusters. We find that the measures described in the application for depletion of hydrazine and xenon are appropriate.

90334 Waiver of the Table of Frequency Allocation, Section 2.106 of the Commission's rules, 47 C.F.R. § 2.106, is granted for space-to-Earth operations, on an unprotected, non-interference basis, in the 12.25-12.75 GHz frequency band from Intelsat 19 in ITU Region 2, including portions of U.S. airspace. Reception of downlink transmissions by Gogo LLC's ESAAs pursuant to grant of Gogo LLC's waiver request is limited to the antenna beam patterns provided in IBFS File No. SAT-MOD-20120628-00107.

90335 Communications between Gogo LLC's ESAAs and the Eutelsat 115 West B and Eutelsat 117 West A space stations must be in compliance with all existing and future space station coordination agreements reached between Mexico and other Administrations.

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90337 Operation pursuant to this authorization must be in compliance with the terms of coordination agreements between the operators of the AMC-1, Eutelsat 172A, Eutelsat 115 WB, Eutelsat 117 WA, Galaxy 17, JCSAT-2B, JCSAT-5A, Intelsat 14, Intelsat 18, Intelsat 21, Intelsat 22, Intelsat 19, Intelsat 904, SES-1, SES-4, SES-6, Telstar 11N, Yamal 300K, Yamal 401, AsiaSat 7, and Apstar V space stations and operators of other Ku-band geostationary space stations within six angular degrees of those space stations. In the event that another GSO Fixed-Satellite Service space station commences operation in the 14.0-14.5 GHz band at a location within six degrees of any of these space stations, aircraft earth stations operating pursuant to this authorization must cease transmitting to that space station unless and until such operation has been coordinated with the new space station's operator or Gogo LLC demonstrates that such operation will not cause harmful
interference to the new co-frequency space station.

90338 Communications between Gogo LLC's ESAAs and the Apstar V and AsiaSat 7 space stations must be in compliance with all existing and future space station coordination agreements reached between China and other Administrations.

90339 Communications between Gogo LLCs ESAAs and the JCSAT-2B and JCSAT-5A space stations must be in compliance with all existing and future space station coordination agreements reached between Japan and other Administrations.

90340 Communications between Gogo LLCs ESAAs and the Yamal 300K and Yamal 401 space stations must be in compliance with all existing and future space station coordination agreements reached between Russia and other Administrations.

90341 The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 C.F.R. § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. JCSAT-2B is a Space Systems/Loral 1300 model spacecraft that was launched on May 6, 2016. Applicant states that JCSAT-2B's two identical interconnected helium tanks will be vented as a part of the retirement procedures for this spacecraft, but a pressure regulator will prevent complete expulsion of the helium in the tanks by cutting off the flow of helium after the 400 psia minimum inlet pressure of the regulator is reached. Applicant states that the helium tanks will retain a total mass of approximately 440 grams of helium at end of life, with each tank volume being 49 liters. We grant a waiver of the Section 25.283(c) with respect this de minimis inert gas.

90342 The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 C.F.R. § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. AsiaSat 7 is a Space Systems/Loral 1300 model spacecraft that was launched on November 26, 2011. Applicant states that AsiaSat 7's two identical interconnected helium tanks will be vented as a part of the retirement procedures for this spacecraft, but a pressure regulator will prevent complete expulsion of the helium in the tanks by cutting off the flow of helium after the 400 psia minimum inlet pressure of the regulator is reached. Applicant states that the helium tanks will retain a total mass of approximately 440 grams of helium at end of life, with each tank volume being 49 liters. We grant a waiver of the Section 25.283(c) with respect this de minimis inert gas.

90343 This grant does not authorize communications between the JCSAT-2B space station and the gateway earth station located in Kapolei, Hawaii (Call Sign E010236). Those communications may not commence until the JCSAT-2B space station has been granted access to the U.S. market by modification of the gateway earth station authorization (Call Sign E010236).

90344 Communications between Gogo LLC's ESAAs and the SES-4 and SES-6 space stations must be in compliance with all existing and future space station coordination agreements reached between the Netherlands and other Administrations.

90346 Applicant's request for a waiver of Section 25.210(f) of the Commission's rules is GRANTED, as conditioned. Section 25.210(f) requires that space stations operating in the Fixed-Satellite Service in certain frequency bands, including 10.7-12.7 GHz and 13.75-14.5 GHz bands, employ full frequency reuse. 47 C.F.R. § 25.210(f). This requirement is part of the Commission's two-degree spacing policy, and the purpose is to ensure that scarce orbit and spectrum resources are used efficiently and to encourage the deployment of technologically innovative satellites. The Commission has waived this requirement where doing so would allow satellite capacity that would otherwise lay dormant to be used to provide service. Yamal 300K is in-orbit and will operate from the 177° W.L. orbital location regardless of whether we permit it to provide service in the United States. Yamal 300K is capable of full-frequency use on some, but not all, of the frequency bands requested for operations with the United States. We find that preventing Yamal 300K from offering its capacity in the United States would preclude the provision of Ku-band service in the U.S. from this orbit location, and it is in the public interest to grant a limited waiver of the full frequency reuse requirement for the 10.95-11.2 GHz and 14.0-14.25 GHz frequency bands. Limited waiver is granted subject to the condition that no compliant satellite is offering service to the United States in the 10.95-11.2 GHz and 14.0-14.25 GHz frequencies at that orbital location.

90347 The Schedule S and other technical information for the Yamal 300K space station in IBFS File No. SES-MFS-20150609-00349, as amended by SES-AFS-20160107-00003, are incorporated by reference into this authorization.

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H) Special and General Provisions

B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station does not meet each required construction deadline by the required date of completion unless, before such date(s), a specific application is timely filed to request an extension of the construction deadline(s), supported with good cause why that failure to construct by the required date was due to factors not under control of the grantee.

Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulates is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993". These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.